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FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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RECORDS OF TREATMENTS.

It is frequently observed that for some little time, one particular disease receives more attention than usual in our journals. Recently this has been noticeable both in foreign and English journals concerning the treatment of tetanus, and it may be said that there is hardly any disease concerning which the profession stands in more need of advancement. More than one new suggestion has lately been made; but none have yet reached further than the experiment stage.

To-day Mr. Penhale reports a favourable experience of the novel "open-air treatment" recently initiated by Mr. Aveston. The case, like those treated under less favourable conditions by Mr. Aveston, suggests that the treatment deserves further trial; but present records are far too few to justify more than that being said, especially with a disease so variable in its course and degree of severity. The orthodox views of the management of tetanus cases obviously suggest grave objections to this new line of treatment; but we might well remember what the orthodoxy of a former generation would have said to our modern treatment of pneumonia. Probably other practitioners will soon be induced to follow the methods of Messrs. Aveston and Penhale; and the reports of their results should be very interesting.

One point in connection with this or any similar subject can hardly be over-emphasised. Failures are quite as important in clinical records as successes; and men who report single cases of a special treatment should remember this. Everyone knows that clinicians recording isolated cases of the results of a treatment are much more inclined to report successful than unsuccessful experiences; but very few realise how much that tendency has done to render clinical records misleading.

TIN AS A THERAPEUTIC AGENT.

The use of tin and its compounds in medicine will be new to most clinicians; but the note of their successful trial in France which we reprint to-day suggests that tin should prove of considerable use in our work, especially perhaps in canine practice. The anti-staphylococcal action *in vitro* of tin, and its apparent therapeutic action in human furunculosis, point in this direction; and the importance of the statement that dogs tolerate the ingestion of tin and absorb it without harm will be clear to every clinician. Granting these claims, there should be many indications for the veterinary use of tin, one of the most obvious of which is the pustular form of follicular mange. Gmeiner's view of the etiology of this disease suggests that internal and external treatment by tin deserves a full trial for it.

OPEN-AIR TREATMENT OF TETANUS IN THE HORSE.

In *The Record* of June 9th Mr. Aveston reported the successful treatment of three well marked cases in the open field; it struck me as being a very simple and novel procedure, especially at this time of the year when all things are favourable, so decided on the first chance to give it a trial; and on the 15th my opportunity came. A client about eight miles distant sent a message to say that he had a three-year-old cart colt recently taken up from grass, suffering from quinsy or strangles, had difficulty in swallowing, and stiff in all four legs. On arrival I found (as suspected) all the usual premonitory symptoms of tetanus: head protruded, lips drawn, tail elevated, stiff and straddling gait, especially in the hind extremities, and considerable difficulty in masticating. After a careful examination I failed to find any external injury, so thought that very probably the mouth or tongue had been lacerated in biting.

I told the owner that I wished in this case to depart from the usual up-to-date methods, and try open-air treatment; he readily consented, and we soon found a suitable field, decently level, and as far away as possible from traffic, or any disturbance whatever; the only medicine left was liq. chloral hyd. to be sprinkled over a little chopped clover twice daily. I called again on the 18th, and was pleasedly surprised to find that all the symptoms at first exhibited had very considerably lessened, and from a distance it was difficult to see anything wrong. Improvement continued, and at the expiration of ten days there was nothing to be seen amiss, and all went well.

Torrington. R. E. L. PENHALE.

THE ACTION OF METALLIC TIN AND OXIDE OF TIN IN STAPHYLOCOCCAL INFECTIONS.

A. Fromin and R. Grégoire have recently made a communication upon this subject to the French Academy of Sciences. They have based their researches upon the fact that in Beauce, France, the workmen employed at tin-working never have furunculi: and that tin-dust is a popular remedy against this affection. On the other hand, one of the authors observed that when metallic tin is added to a synthetic culture medium supplemented with alcohol, and *Mycoderma aceti* is sown in this medium, the development of the micro-organism is not sensibly modified, but the production of acetic acid is limited or ceases entirely.

The authors have therefore inquired whether tin

is capable of exercising an action *in vitro* upon the development and the virulence of staphylococci, and have also investigated the eventual therapeutic action of tin.

From this inquiry it results that the addition of protochloride or of oxide of tin or of metallic tin to *anærobic* broth cultures of staphylococci diminishes the vitality of the culture. If re-sowing is practised every forty-eight hours, only an insignificant development is observed after the third or fourth passage.

In *ærobic* cultures the same phenomenon is seen, and also an attenuation of the virulence of the staphylococcus. The authors proved this attenuation by systematic researches upon rabbits.

The authors then investigated the therapeutic properties of tin and its salts with relation to the staphylococcus. They succeeded in demonstrating that the chloride and the hydrate of tin, dissolved in tartaric acid and injected intravenously twelve hours after the intraperitoneal inoculation of staphylococcus culture, retarded death in rabbits for four, seven, and eight days.

The authors also proved not only that dogs tolerate the ingestion of oxide of tin and of metallic tin without any disturbance, but also that these substances are absorbed by the organism.

The authors finally summarise their conclusions as follows:—

1. Metallic tin and oxide of tin are absorbed by the digestive tract and are innocuous to the organism.
2. The salts of tin display a therapeutic action in cases of experimental staphylococcæmia.
3. The microbicidal action of these salts and their influence upon the virulence of staphylococci justify the employment of such products in staphylococcal affections.

Upon the basis of fifty personal observations, the authors are able to confirm the efficacy of treatment by tin in furunculosis of man. The administration *per os* of from 0.5 gramme to 1 gramme of tin, or of a mixture of tin and oxide of tin, has led to the disappearance of all the furunculi in a period of time varying from five to fourteen days, without any recurrence even after six months.—(*La Clinica Veterinaria*).

Potassium Iodide in the Treatment of Epizootic Lymphangitis.

Cartier, in *Le Recueil de Médecine Vétérinaire*, recommends the use of potassium iodide in epizootic lymphangitis. He prefers, instead of injecting solutions of the salt into the veins, to give it by the mouth in rather large doses (from 12 to 20 grammes). Usually the treatment is divided into periods of from twelve to fifteen days, with six or seven days interval between them. The abscesses and nodules are opened and scraped; and the wounds washed with solutions of iodine and potassium iodide. In order to destroy the parasites *in situ* and to impede their dissemination, the ulcers are covered with a powder containing one part of mercuric iodide to sixty of talc.—(*La Clinica Veterinaria.*)

A case of Dystokia from Mal-Position of the Umbilical Cord.

José S. Pedraja records the following unusual case. A she-ass manifested the first symptoms of labour pains at six o'clock one evening; but, after three hours of labour and the rupture of the membranes with the expulsion of their contents, parturition was not accomplished. The pains then subsided, and the animal began to eat.

Pedraja saw her next day, about twenty hours after the first appearance of the pains. He found her in a state of apparent health, but with portions of the ruptured membranes outside the vulva. Exploration showed that the fœtus was presented posteriorly in the lumbo-sacral position, and Pedraja could not account for the delay or suspension of parturition. The fœtus was dead, and had commenced to swell, which considerably increased the difficulty of delivery; but this did not explain why parturition had not been accomplished at due time.

Further manual exploration showed that the umbilical cord did not follow the normal direction. It ran backwards from its origin along the median line of the fœtus, passed between the two hind limbs, and turned round the posterior and external part of the left thigh, to be implanted in the infero-posterior portion of the body of the uterus. This, of course, absolutely impeded the progression of the fœtus.

Pedraja divided the cord, and then proceeded to forced extraction, which, by four men reinforcing vigorous maternal efforts, was successfully performed. The animal was very exhausted for a short time; but she rapidly recovered, and subsequently did well.—(*Revista de Higiene y Sanidad Veterinaria*).

[Cases of this nature are mentioned in obstetrical text-books, but are regarded as rare. When the fœtus is living, it may be possible to disentangle the cord, but there was no object in making the attempt in this case.—*Transl.*]

Intestinal obstruction in a Horse due to Sub-mucous Hæmorrhage.

Pagnon, in *Le Bulletin de la Société Centrale de Médecine Vétérinaire*, has reported the following very unusual case. A horse died after suffering for three days from colic due to intestinal obstruction. There was great sensitiveness in the hypochondriac region.

The post-mortem lesions were curious and very rare. The floating colon, for a metre of its extent and at its convex curvature, presented an abundant hæmorrhage between the mucous membrane and the muscular coats. The hæmorrhagic clots were raising the mucous membrane to the extent of completely obstructing the lumen of the intestine. This hæmorrnage, the cause and precise place of origin of which could not be determined, must have developed slowly for some days without constituting a functional obstacle until it was very abundant. Both the mucous membrane and the serous membrane were undergoing mortification in some places;

and, in consequence of the alteration of the external tunics of the colon, there was a commencement of acute peritonitis. Some ten litres of peritoneal liquid, in which fibrinous "false membranes" were floating, had invaded the abdominal cavity.—(*Revista de Veterinaria Militar.*)

W. R. C.

MEAT INSPECTION.

By WILLIAM J. HOWARTH, M.D. Manch., D.P.H., Medical Officer of Health, City of London.

(Continued from p. 76.)

REGULATIONS RESPECTING UNSOUND MEAT.

The value to the community of regulations would obviously depend upon the skill of the executive officers, and the energy displayed by local authorities in giving effect to them, but even with the best organisation some unsound meat would escape notice. That this need not be a large proportion is proved by experience in the examination of imported meat.

In practically all meat-exporting countries regulations have been framed to guide inspectors, who generally are appointed by the respective Governments. Regulations exist in Australia, New Zealand, Argentina, the United States of America, Holland, and other places. A considerable amount of carcase meat from these countries passes through London, and at Smithfield Central Market probably more is cut up on a limited area than anywhere else in the world. The cutting-up process brings to light hidden defects, and the experience gained there is of interest.

The amount of tuberculous meat discovered at Smithfield among the South American imported carcases during the four years 1912–15 is set out in Table.

Year.	Tons.	Condemned—tuberculous.		
1912	140,179	43 hindqrs.,	8 foreqrs.,	25 pieces.
1913	154,503	27	10	
1914	143,910	43	11	
1915	92,212	26	5	2 pieces.

The totals condemned are insignificant and not much exceed what might be expected from ordinary defects of administration. They do not include any meat condemned other than for tuberculosis. That this freedom of the carcases from tuberculosis is not due to absence of disease among the stock will be gathered from the fact that Mr. T. Dunlop Young, reporting on the subject of Argentine meat, as a result of a visit to that country with the authority of the Corporation of London, states that during 1912, of 1,368,000 cattle slaughtered at the frigorificos, and mainly for export, 4 per cent were affected with tuberculosis, a total which would exceed 54,720 cattle.

Some figures are also available respecting Dutch pigs, and though they are incomplete they support the present contention. In a period of nine weeks 43,330 pigs—about one-sixth the total received at Smithfield, were specially reported upon. Among these, 39 carcases were seized. None of these seizures were necessary on account of tuberculosis: nine were rejected on account of decomposition, one for hæmorrhagic spots, and 29 for other reasons not associated with disease. Five carcases from this consignment had already been seized at the Port for reasons which could not then be ascertained, but assuming these were on account of disease the total is not large, and tends to prove that inspection carried out on formal lines, though not resulting in absolute perfection, brings about the elimination of much animal food unfit for human consumption.

These results, both as regards the carcases of oxen and pigs, are much better than would have been observed among an equal number of home-killed animals, and this is due mainly to the differences of inspection and to the greater uniformity of action which follows the discovery of unsoundness where regulations are in force.

Comparative Standards of Inspection.

There are certain marked differences between the regulations of this country and those in operation in other European countries and in the United States. In this country meat is either fit for human consumption or it is not; but on the continent an intermediate grade of non-marketable meat exists, and provision is made for the sale of some of this meat, subject to its being sold under declaration, and either with or without its first having undergone some approved form of treatment. In the larger towns the intermediate grade is sold only after it has been treated by boiling, steaming, the removal of fat and destruction of the rest of the carcase, pickling, or freezing. By this means the flesh of selected animals which have suffered from varying degrees of tuberculosis, swine fever, swine erysipelas, certain febrile conditions, measles, etc., is rendered safe for human consumption.

In the United States flesh from a tuberculous carcase which is regarded as being affected in a degree intermediate between total condemnation and that which may be regarded as fit for human consumption may be passed for sterilisation after the removal of the affected portions. Meat passed for sterilisation may only be sold for human consumption under declaration. The carcases may be rendered into lard or tallow, or if not so treated may be sterilised and used for food purposes, but presumably only of canned meat, and provided the container is plainly and conspicuously marked so as to show that the product is second-grade class or quality, and has been sterilised. Provision also exists for the use of beef and pork showing a certain degree of measles, and of carcases affected to a minor extent with swine fever.

Consideration would require to be given to decisions necessary in special instances, such as actinomycosis of ox heads, particularly when the tongue is free, and the disease localised and without suppurating fistulous tracts; immaturity in calves; jaundice; new growths; and parturient animals.

THE TUBERCULOSIS PROBLEM.

Tuberculosis is the reason for condemnation of a large proportion of the organs of slaughtered cattle, and it is the chief cause of condemnation of the whole carcases. Out of a total of 68,438 animals slaughtered at Aldgate, the carcases of 341 were totally condemned, and of these the reason was tuberculous affection in 319, or 94 per cent. Among 50,288 calves, 139 carcases were condemned, of which 41, or 30 per cent., were on account of tuberculosis.

A Table shows the high incidence of the disease on cows.

Tuberculosis in any degree.—Aldgate.

	Slaughtered.	Affected.	Percentage.
Bulls ...	2,565	381	14·9
Cows ...	4,434	1492	33·7
Heifers ...	1,079	68	6·4
Oxen ...	48,953	1872	3·9
Calves ...	39,333	121	0·31

The degree of affection is shown to some extent by comparing the percentage of total condemnations of carcases to numbers affected with tuberculosis.

Whole carcases.

	Affected.	Condemned.	Percentage.
Adult bovines	3813	319	8·4
Calves ...	121	41	33·9

Although more fully developed animals were affected with the disease than were calves, the latter presented a higher percentage of dissemination than the former.

The question of satisfactory Regulations.

The guiding principles regarding the action which shall be taken in the case of tuberculous meat are laid down in the recommendations of the Royal Commission. A considerable want of uniformity is, however, observed throughout the country, which is due in great measure to the fact that the recommendations are only suggestive. This divergence of views has been objected to in the past by traders, but has been tolerated. Probably the very low cost of meat has contributed to the tolerance under protest. Indications suggest that possibly the increase in price in recent months will be permanent if only in part. The first result of such increase will be that the condemnation of a carcase will be of greater import financially, and differential treatment will thus have a more marked effect. The increased value of the carcase will also encourage deceit, to meet which more complete arrangements for inspection will be necessary.

The problem of framing entirely satisfactory instructions in the case of tuberculous meat is not an easy one.

When an animal has been successfully invaded by the tubercle bacillus two conditions at least result from the development of the disease: the function of the affected organ is diminished in proportion to the extent of the lesion, and the constitution of the animal is prejudiced as a result of the absorption of poisonous products from the lesion gaining access to the blood stream. The extension of infection results in an increase in the severity of symptoms. It is obvious that the animal should be regarded as diseased from the time of infection, and it becomes therefore a matter for consideration whether the flesh of animals so affected shall be prohibited, either because it may transmit the disease to persons partaking of it or because the flesh takes on qualities which may render it of low nutritive value, or because some quality may have been imparted to it, other than that of direct disease transmission, which may prove prejudicial. Even if these possibilities exist it is clear that there are degrees of risk varying between that resulting from the earliest infection to that which follows the more developed and multiple lesions.

The recommendations of the Royal Commission are as follows:—

The entire carcase and all the organs may be seized if:—

1. Miliary tuberculosis of both lungs.
2. Tuberculous lesions present on both the pleura and peritonium.
3. Tuberculous lesions present in the muscular system, or in the lymphatic glands embedded in or between the muscles.
4. Tuberculous lesions exist in any part of an emaciated carcase.

The carcase if otherwise healthy shall not be condemned; but every part of it containing tuberculous lesions shall be seized if:—

5. The lesions confined to the lungs and the thoracic lymphatic glands.
6. Lesions confined to the liver.
7. Lesions confined to the pharyngeal lymphatic glands.
8. Lesions confined to any combination of the foregoing, but are collectively small in extent.

In view of the greater tendency to generalisation of tuberculosis in the pig we consider that the presence of tuberculous deposit in any degree should involve seizure of the whole carcase and of the organs.

Generalisations as to the mode of extension of infection.

Principles would form a better basis of action than detailed statements, provided competent inspectors existed to interpret them, and the following generalisations, which have some bearing on the case, may be briefly considered.

Infection may reach the system through the respiratory or digestive tracts, and less frequently by the generative organs or as a result of inoculation through the skin. Instances of congenital infection are also met with.

Extension may take place by way of the lymphatic system, or the blood stream, or both. Tuberculous discharges thrown off by the animal from the seat of infection may also infect more distant mucous surfaces, as, for instance, the urinary tract below the kidney from urine secreted by a tuberculous kidney, and the larynx or intestines by infected sputum thrown off from a tuberculous lung.

In the case of extension along the lymphatics it seems unlikely that much extension, if any, can take place in a direction opposite to that of the lymph-flow, which is from the organ drained to the corresponding gland, and from the gland to the central lymph channels*—the thoracic duct on the left side and the main lymphatic duct on the right side. Infection of healthy glands away from the original infecting lesion may result as a consequence of being placed along the line of lymph-flow and receiving infected lymph. In certain instances it is not always possible to assert confidently that one gland has infected another or that the flow in the smaller lymph-vessels is invariably in one direction. This is due to the fact that the exact area drained by certain glands cannot be stated with absolute certainty, and also that there are most numerous anastomoses between lymph-vessels in fairly well-defined areas.

It follows that one or more glands may be infected from a common source of infection, and no deductions can be drawn with certainty as to the sequence. Fortunately, it is practically never necessary for a meat inspector to make such a fine distinction.

On the other hand, there are glands respecting which a fairly positive statement may be made that lymph entering them has been received from a well-defined area, and if such a gland shows a tuberculous lesion, that the infection was derived from the area drained. Such glands are those connected with certain organs, particularly the portal gland, the renal gland, and the internal inguinal or supra-mammary gland, according to sex. There are others which receive lymph only from the muscles, bones, and joints of the extremities—*e.g.*, the prescapular, precrural, and the popliteal—and infection of these has a similar definite significance.

The venous blood stream receives infection from infected lymph which enters by way of the thoracic duct or right lymphatic channel, or by the infection gaining direct entrance through the erosion of a vein which has become implicated in a tuberculous process, either within a gland or otherwise.

In the blood stream the bacilli are conveyed to the lungs (except in the case of the portal system) and from thence may pass into the arterial blood stream to reach other organs. The lungs are most generally affected, and next most frequently the liver. The spleen and kidneys may be affected, but the latter more frequently. The substance of the spleen rarely, if ever, develops lesions in cattle infected after the calf age. Muscular tissue rarely shows lesions, whilst bony structures are much more frequently affected in pigs than in cattle.

* Prof. G. H. Wooldridge informs me that, in general, he agrees with the proposition that extention by lymphatics is in the direction of the lymph current, but his observations lead him to believe that in the case of tuberculosis of the udder, the mammary gland may be infected in a backward direction from the supra-mammary glands. The reasons are mainly physical and need not be further discussed here.

The brain and spinal cord are infected from the blood stream. The reasons for the differences in the glandular structures may be found in the varying amount of blood transmitted to them, differences in the speed of flow, and perhaps the action of the gland contents on the organism.

The blood itself seems able to get rid of organisms or to destroy their pathogenicity in a few days, as has been shown by M'Fadyean and others, and in this the filtering action of the various glands assists, but there is also a direct lethal effect, and probably excretion is not a negligible factor.

The object of Pathological research.

Sir STEWART STOCKMAN, speaking at the Edinburgh Conference of the Highland and Agricultural Society, on 8th inst., said:—"In relation to the study of diseases of stock for the benefit of agriculture, veterinary pathology was the basic and chief thing. It was quite important enough, and its object was important enough, to require that it should be something by itself if material progress was to be made. Their problem was not merely to cure or prevent disease, but to do so on a commercial basis. He did not hold the view that the public purse should bear the whole expense. It would be a pity if an effort was not made to encourage gifts from private donors.

The problems that remained for solution to-day required laborious and continued research over a number of years. The wisest procedure was to make full use of the veterinary colleges and other existing institutions, and to extend their usefulness. Under any scheme which necessarily involved more than one institution provision was to be made for co-ordination of results. He did not favour the conception of a central institution to deal with everything. In conclusion, he said that the co-operation of stockowners was desirable for the assistance they could give in bringing their difficulties to the notice of research institutions, providing material for investigation, and trying methods of cure and prevention. Stockowners should not hide their troubles. Possibly a joint committee of stockowners and researchers would best meet the case."

THE NECESSITY FOR CO-ORDINATION OF RESEARCH AND EXPERIMENT.

Principal O. CHARNOCK BRADLEY spoke briefly on the need for co-operation, organisation, and co-ordination in their research and experimental work. He was pleased to hear from Sir Stewart Stockman the encouraging report regarding his new laboratory and experiment station at Weybridge, and he expressed the hope that that might prove a step towards the ambition which he cherished. When Sir Stewart's scheme was fully developed, he hoped it would not contain a weak point. The department would grow not alone by the accumulation of technical matter. Co-operation and co-ordination of effort with stockowners was an absolute necessity if progress was to be made. What was done was for the benefit of the stockowner, not for the benefit of the research worker. Conservation of the stock of the country was a source of national wealth. Prevention and early diagnosis were two things absolutely necessary to that end. The conservation of stock could be attained by means which did not at first appeal to the stockowner. Could they estimate how much would be saved to this country by the early diagnosis of disease? Serum diagnosis was only in its infancy. Co-ordination of effort was absolutely necessary for research after the war. The veterinary research worker and the owner of stock must be brought into the very closest contact."

Brilliant Green as an Antiseptic.

A note on this subject by Capt. C. H. S. WEBB, M.S., F.R.C.S., R.A.M.C., appeared in *The Brit. Med. Jrnl.* of June 30, from it we take the following:—

Since May, 1916, I have been using and observing the effects of a solution of a brilliant green in the treatment of wounds that have passed through my hands at a casualty clearing station. On the whole, I am favourably impressed with the good results obtained from its use.

Investigations by Browning, Gulbransen, Kennaway, and Thornton (*B.M.J.*, Jan. 20, 1917) have shown that concentrations of brilliant green which are highly bactericidal for organisms, such as staphylococci, in the presence of serum, do not interfere with the process of phagocytosis; in this respect brilliant green is much superior to mercury perchloride.

The brilliant green is dissolved in normal saline solution in the strength of 1 in 1000. At this strength it can be used as a lotion, and gauze soaked in it can be applied to the wound as a dressing. It is non-irritant to the tissues, and I have applied it to the peritoneum, the meninges, the synovial membranes, and practically all other varieties of tissue without harmful effects. The less vascular tissues are stained green by its use—for instance, the cuticle of the skin, the edges of fascia or aponeurosis, and sometimes bone. But where it has been in contact with the more vascular muscle or subcutaneous tissue no staining occurs. Dead and necrosed portions of muscle are stained green, and this fact is sometimes of use in distinguishing such necrotic tissue.

After being in contact with the tissue, the dye gradually becomes transformed into a leuco-derivative, and the hitherto green-dyed gauze in contact with the wound becomes white to the depth of several layers. Granulation tissue gradually forms in the wound, and to emphasise this statement I believe that the formation of granulation tissue is more rapid and more "virile" in character under the influence of a dressing of brilliant green than with other antiseptics—for example, eusol.

The most striking results are seen in the cut surfaces of muscle. The muscle rapidly becomes bright red, and the formation of a highly vascular granulation tissue takes place. In thirty-six to forty-eight hours the muscle may be covered with firm, "dry," bright red granulation points, which present none of the shreddy, sodden look of the granulations under a eusol dressing.

The surface of the wound is drier, and the pus formation is smaller in amount and thicker in consistency, than in a similar wound dressed with eusol.

To the foregoing may be added a further note, by Capt. ARTHUR F. COLE, R.A.M.C. (*B.M.J.*, Aug. 4), emphasising the economy both of time and material effected by the use of this agent.

"After experimental proof in every sort of case had convinced me of the value of brilliant green, I was interested to find that my surgical nursing staff was equally enthusiastic in spite of occasional stained hands and clothes. The extraordinary results, and the increased comfort of the patients, and the diminished number of dressings to be done had convinced them also. The wounded from Mesopotamia arriving at Cumballa Hospital, Bombay, differed in some degree from most of those arriving in England from, say France. For geographical reasons it was usually three weeks before they got to Bombay, and wound infections were strongly entrenched. *B. pyocyaneus* in particular, especially in septic compound fractures, was hard to overcome.

After preliminary surgical treatment—in some cases already carried out in Mesopotamia—ordinary absorbent

gauze, wet with 1 in 1000 brilliant green (aqueous), was applied to the wound, inserted into sinuses, and covered with protective; even the foulest case was dressed not more than once daily, and surface infections often only alternate days. Cultures taken from the 'pus' were used to control the clinical improvement, and even in the Bombay climate, so favourable to the growth of organisms, wound infections were overcome by the resistance of the patient aided by the brilliant green.

As regards the actual economy in dressings, it was found that during two periods of six weeks, with and without brilliant green respectively, the quantity of material consumed was roughly as 1 is to 2. The average number of patients under this treatment at one time was 85."

Blackhead in Turkeys.

Two livers taken from young turkeys have been sent to us recently for examination. In both cases the disease present was what is commonly known in America as "blackhead." We regret to say that this fatal and highly contagious disease is becoming very common in Ireland, and as neither of the owners of the dead birds referred to had any idea of the cause of the loss of so many of their turkeys, a brief description of the disease may help. There is, unfortunately, no cure, but when an enemy is recognised it is, at all events, possible to take precautions to prevent its further spread.

At the outset it may be said that it is a disease peculiar to turkeys; chickens running with a diseased flock are apparently immune.

The two periods of the turkey's life during which it is likely to succumb to this disease are during the early stages of growth, often during the second month; and again in autumn, just before the fattening period.

The first symptom we have observed is a certain listlessness—the bird lacks "life" as it were. There may or may not be diarrhœa. American investigators are very consistent in their statements of diarrhœa being a constant symptom, but our experience does not bear out this observation. After a day or two the bird dies. With such very young birds the symptoms are not apparent until just before death, although on making a post-mortem examination one wonders how this can be so.

On post-mortem examination special note should be made of two points—(1) the liver, (2) the blind tubes (cæca). The liver is usually spotted with peculiar looking circular patches, quite flat, like discolorations rather than the hard, cheesy-like nodules associated with tuberculosis.

The two diseases are very commonly confounded. Tuberculosis is not a disease of young birds, and in a six weeks old turkey, even if no other symptoms were present, the spots on the liver point strongly to blackhead. The cæca are found just at the junction of the small and large intestines, and can easily be picked out owing to their swollen appearance. Instead of the normal dark-coloured semi-fluid digested food, they are full of a cream-coloured cheesy-like material, and are greatly enlarged. These two symptoms may be taken as proof of the disease.

The parasite which is said to cause the trouble has an extremely complicated life-history, and is still the subject of considerable controversy amongst investigators. It does not seem of much use to try remedies. Salmon advises a little iron and sulphur; the iron may be used at any time, but the sulphur is dangerous in wet weather, and must be used with caution. Purgatives, such as Epsom salts or castor oil, should not be given. There are a few points to be strictly observed in the case of a small outbreak, or at the first sign of the disease:—

(1) Do not run the later broods over any ground where an older flock or a last year's flock had blackhead.

(2) Disinfect all houses, coops, etc., at short intervals, certainly for each fresh lot of birds.

(3) Scald food dishes well.

(4) Keep the turkeys from wet. There are always more deaths in wet than in dry weather; consequently, it is evident wettings tend to promote the disease.

(5) Do not buy stock from a farm known to have "blackhead."

(6) Do not sell for stock birds from a flock where there have been deaths from this cause. Some birds recover and act as carriers all their lives. The worst "blackhead" liver we have ever seen came from an adult turkey hen that had seemingly been in good health up to a short time before her death. The liver showed lesions that were obviously of long standing, and it is probable the bird had been spreading the disease wherever she went. We were, unfortunately, unable to obtain the cæca of this old bird for examination.

This disease will not "wear itself out." Each year sees it become worse on an infected farm, until turkey-rearing becomes an impossibility—as on so many farms in Rhode Island, U.S.A. This State, once a great turkey-raising territory, is now practically devoid of the birds owing to the ravages of blackhead. Some of the best men of science are at work on the problem of prevention or cure, but, so far, they have not been able to save birds that are badly attacked, though, no doubt, many mild cases recover.

It should always be borne in mind that the greater the vigour of the young stock and the better their food (not of necessity rich food), and the cleaner they are kept from lice, ticks, and red mite, the higher their powers of resistance. The longer they escape, the greater chance they have of surviving the illness, but no hopes must be built on this. Infected land should be cleared of turkeys for a couple of years before restocking.—M.H.M., in *The Farmers' Gazette.*

Cruelty Charge at Swansea—V.S. fined.

At Swansea, on Wednesday, 15th inst., Stanley J. Pike, M.R.C.V.S., was summoned for unlawfully causing a mare to be cruelly ill-treated between June 20th and July 25th. William Geo. Ball, an employee of Pike was also summoned for cruelty to the animal. Mr. Augustus Jones, owner of the horse, valued the mare at £75. Mr. Marlay Samson prosecuted, instructed by Mr. J. Stanley Owen, and Mr. Rupert Lewis defended.

Mr. Samson said the horse was totally unfit to go to work on the last occasion, July 25th. She was very ill at the time, and quite unable to pull a trap along the heavy Gower roads. The horse was suffering from double pneumonia and hydrothorax, and her body was a network of weals and running sores. On the last occasion she was worked she was practically dying. Mr. Samson said this was apparently due to flogging, but the servant or servants responsible for it could not be traced. The animal was put into Mr. Pike's custody in June, and on June 26th Mr. Jones saw the mare which was in an abominable state, and could hardly walk across across the yard; in fact, her respiratory organs were ruined. Mr. Pike had stated that the mare had not been worked for a week.

The animal died on August 11th. The mare Duchess was given into Mr. Pike's custody for her services to be given in return for her keep. At the time of the agreement she was a fine animal, and in the words of a veterinary surgeon she was the "best mare in Swansea."

Mr. Augustus Jones, of the firm of Jones, Walters and Co., said the mare was bought at Cardigan in 1916, and was at that time five years old. Some time later she refused to negotiate any hills, and was sent to Mr. Pike. Witness told Mr. Pike that he and his assistants ought to have their coats taken off and receive the same treatment as the mare had.

By Mr Rupert Lewis : I did not refuse to discuss the matter with Mr. Pike, but I ordered him from the office.

D. E. Davies, foreman ostler at Messrs. Walter, Jones and Co. at Swansea, said he failed to recognise the animal when it returned on July 25th. She was hardly able to move, and from head to tail was nothing but marks made with a whip. In fact, she was a total wreck, and even then she had been six days in the stable.

Mr. Sam Chapman produced photographs of the mare taken in Mr. Pike's presence.

Dd. Scott Weir, M.R.C.V.S., said Mr. Pike was asked to put her in double harness, and on several occasions he saw her in a two-horse brake. He saw her on the 26th, and she was covered with weals, undoubtedly caused by whipping. She was also suffering from debility, and there were numbers of sores caused by the harness. These were at least seven or eight days old. There were, in addition, dropsical swellings between the two forelegs. Her debility and dropsy could have been caused by under feeding, over driving, by the fact that the horse was a dainty eater and "poor doer" (requires coaxing to eat its food). The mare was a thin-skinned one, and the whip marks might have been made over a considerable period. When he saw the animal on July 26th she was in an emaciated state. The whip marks stretched from the rump to the shoulder. Witness attended at a post-mortem, and arrived at the conclusion that death was due to dropsy caused by debility. This might have been brought on by a sudden rush of work.

Mr. James Murray Stewart, M.R.C.V.S., gave corroborative evidence.

DEFENCE.

Mr. Pike said he took the mare with reluctance to oblige Mr. Weir, and declared that the animal had every attention, being given only occasional work, and then placed under the control of his most experienced and careful driver. As to the alleged sores, they were slight, and received due attention, healing quickly under the treatment, and being properly protected from friction. The animal was in a "soft" condition when he received her, and she was very delicate in her feed. To that he attributed her state of health, she being what is known as a "bad doer." She had been in the stable several days before being taken out with a brake the last time, and he allowed Ball to take her out that day because he expressed the opinion that she was in a much improved state. Ball had reported to him her jibbing propensities, and in answer to questions he expressed the opinion that it would be wise to apply the whip moderately if a horse started jibbing at a point where if it continued it might be dangerous to the occupants of a vehicle. He had frequently seen the mare, and saw no sign of disease. He gave her medicines, but he had not drugged her.

The driver Ball said on most of the occasions when he took the horse out she caused a great deal of trouble by jibbing.

The magistrates, after retiring, fined Mr. Pike £10 and Ball £5, and they allowed £5 towards the expenses of the witnesses for the prosecution and advocate's fee. *The Herald of Wales.*

A question of evidence.

Sheriff Broun, in Ayr Sheriff Court, has given his decision in a case in which David Manson, farmer and potato grower, was charged with having contravened the Seed Potato Orders by selling 5 cwt. of seed potatoes of the Epicure variety, of which he was the grower, at the price of £16 per ton, being beyond the maximum price fixed. The defence was that the respondent, while admittedly the grower of the potatoes, was also a retailer, and was entitled to charge the retail price.

The Sheriff found the charge not proven. He said he had come to the conclusion somewhat reluctantly that the charge had broken down, not on account of the point raised by the defence, but on another point. On the contention of the defence, he would have decided against the respondent, as he considered there was no exception in the Act about a grower. Seed potatoes were quite clearly defined by the Act as follows:—"As from 1st April a seed potato shall, for the purposes of all the Orders, mean a potato which will not pass through a riddle having a one-inch mesh, and will pass through a riddle having a two-inch mesh.

Had it been proved that these potatoes were seed potatoes according to the Act? If Mr. Manson had pleaded guilty he would have had nothing to do with it but to take his statement; but when the case went to proof, all the facts that made up the charge must be proved to the satisfaction of the Court, and there was no evidence whatever that the potatoes were seed potatoes according to the definition of the Act.—*N.B.A.*

SUBSCRIPTIONS TO R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following subscriptions for 1917 :—

W. J Fletcher, Wrexham	(1916, 1917)	£2	2	0
R. L. L. Hart, Capt. A.V.C.		1	1	0
J. H. G. Jerrom, Capt. A.V.C.		1	1	0
P. J. Malone, Capt. A.V.C.	(1916, 1917, 1918)	3	3	0
S. J. Motton, Capt. A.V.C.		1	1	0
V. Pride-Jones, Capt. A.V.C.		1	1	0
R. G. Saunders, Penzance		1	1	0
W. Watt, Capt. A.V.C.		1	1	0
H. S. Wright, High Wycombe		1	1	0
Previously acknowledged		848	15	0
		£861	7	0

ARMY VETERINARY SERVICE.

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, Aug. 17.

REGULAR FORCES. ARMY VETERINARY CORPS.

To be temp Maj.:—Temp. Lt.-Col. R. J. Stordy, D.S.O., E. African Protectorate Forces (Aug. 1).

Aug. 18.

Temp. Capt. G. P. Hayter resigns his commn. (Aug. 19).

Aug 20.

To be temp. Lieuts.:—W. L. Sinton, G. McElligott, R. W. M. Mettam, T. Hodgins, (Aug. 1); T. F. Arnold, C. S. Northcott, T. A. Elam, J. B. Garside, T. Grahame

Aug. 22.

Capt. to be temp. Major:—P. J. Simpson (Jan. 24, 1916) (substituted for that which appeared in the *Gazette* of Feb. 24, 1916).

SPECIAL RESERVE OF OFFICERS.

Aug. 17.

Lieut. (on prob.) J. Leigh is confirmed in his rank (Aug. 18).

India Office, Aug. 16.

Capt. (actg. Maj.) E. G. Turner to be Asst. Dir. Vety. Services (Dec. 23, 1916).

TERRITORIAL FORCE, ARMY VETERINARY CORPS.

War Office, Aug. 16.

To be actg. Majors whilst empld. as Dept. Asst. Dirs. of Vety. Servs.:—Capt. J. H. Wright (July 4); Capt. C. Hartley, jun., F.R.C.V.S. (June 22); Capt. A. W. Reid, F.R.C.V.S, Capt. J. S. Bowden (June 25): Capt. A. N. Foster, F.R.C.V.S., Capt. P. Abson (July 1).

Aug. 20.

Capt. H. C. Jagger to be actg. Major whilst empld. as A.D.V.S. (June 26).

Aug. 21.

Capt. H. E. Powell to be actg. Major whilst empld. as A.D.V.S. (June 28).

The following casualties are reported :—

DIED—Pte. W. Broomfield, 17474 (Ongar)
Pte. A. B. Bennett, 6749 (Worthing).
KILLED—Sgt. J. W. Southall, 6047 (Wentbridge).

OBITUARY.

MARK.—James Wilson Mark, 2nd Lieut., Royal Irish Regiment, dearly beloved elder son of James Mark, M.R.C.V.S., The Chestnuts, Newry, Ireland, died of wounds, August 7.

The late Capt. J. M. Christy.

Capt. James Macnab Christy, M.R.C.V.S. late Senior Veterinary Officer, Transvaal, received his professional education at the Royal (Dick) Veterinary College, Edinburgh. He was for ten years in the Irish Civil Veterinary Department, and a constant exhibitor of horses at the shows of the Royal Dublin (Agricultural) Society. He went to South Africa, served through the war, and received the Queen's (three bars) and the King's (two bars) medals. In 1905–7 he was President of the Transvaal Veterinary Medical Association.

VETERINARY STUDENTS IN THE ARMY.

Dear Sir,—The heading you have given to my letter in the current number of *The Record*, *re* Veterinary students and military service, is rather misleading. I think it is a fact that very few if any of them are serving in the A.V.C. If they were they would be serving the country in a branch of the service in which their special training both before and after entering the colleges could be profitably utilised; also they would be gaining fresh experience which would be useful to them and to the nation in their future professional careers. As a matter of fact the majority if not all of them are in the combatant branches of the service. As the war apparently is going to continue for some considerable time yet, I think it is in the national interest if, as I said in my previous letter, a steady supply of trained experts is to be turned out from the Colleges, that such students should be sent back to continue their training.

Aug. 20. LOOKING AHEAD.

THE HUGH TAYLOR HUT, Y.M.C.A., IN THE ADVANCE VETERINARY CAMP.

At the Council meeting of the Royal Agricultural Society, on July 25, it was reported that in the competitive examination for the Society's prizes for cattle pathology, Royal Veterinary College, the silver medal has been gained by Mr. L. P. Pugh, Pennard House, Sevenoaks; and bronze medal by Mr. F.C. Scott, Womersley, Pontefract, Yorks.

From 1st Jan. to 4th Aug. this year, Ireland sent us 155,550 fat cattle, 128,745 fat sheep, and 126,700 fat pigs. Her total export of live stock (exclusive of horses, etc.) was over 915,000 head.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.		Anthrax		Foot-and-Mouth Disease.		Glanders† (including Farcy)		Parasitic Mange.		Sheep Scab.	Swine Fever	
		Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Out-breaks.	Slaugh-tered.
IRELAND. Week ended **Aug. 11**		...	...	...	...	...	...	Outbreaks 1		5	5	16
Corresponding Week in	1916 ...	...	...	...	...	...	...	1		3	4	25
	1915 ...	...	...	...	...	...	...	2		2	3	16
	1914 ...	...	...	...	...	...	...	1		1	2	8
Total for 32 weeks, 1917 ...		3	5	...	...	1	1	34		248	165	999
Corresponding period in	1916 ...	3	7	...	...	...	...	45		257	203	1185
	1915 ...	1	1	...	...	1	3	42		270	165	926
	1914 ...	1	1	76	957	...	...	56		379	144	720

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Aug. 13, 1917.

NOTE.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks (a)	Animals.	Out-breaks (a)	Animals.	Out-breaks (b)	Animals.	Out-breaks (b)	Animals.	(b)	Out-breaks (a)	Slaughtered. *
GT. BRITAIN. Week ended Aug. 18	3	3			2	2	29	41	2	30	15
Corresponding week in 1916 ...	7	9					15	34	2	80	58
Corresponding week in 1915 ...	7	9					7	20		59	267
Corresponding week in 1914 ...	11	11				2	5	6	1	61	224
Total for 33 weeks, 1917	321	368			18	30	1831	3587	395	1661	715
Corresponding period in 1916 ...	360	424	1	24	34	89	1657	3758	180	3174	8532
Corresponding period in 1915 ...	407	467			35	64	557	1221	159	2871	12853
Corresponding period in 1914 ...	505	546	11	74	70	216	1516	2628	151	2711	28412

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.
(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked :—London 1, Stafford 1
Board of Agriculture and Fisheries, Aug. 21, 1917 Excluding outbreaks in army horses.

IRELAND Week ended Aug. 18	...	...	...	...	...	...	Outbreaks 2	5	4	29
Corresponding Week in 1916 ...	...	...	...	...	...	...	1	5	11	12
Corresponding Week in 1915 ...	...	...	...	...	...	...	3	5	5	23
Corresponding Week in 1914 ...	...	...	...	...	...	...	2	1	6	24
Total for 33 weeks, 1917 ...	3	5	...	...	1	1	36	253	169	1028
Corresponding period in 1916 ...	3	7	...	...	...	...	46	262	214	1197
Corresponding period in 1915 ...	1	1	...	...	1	1	49	275	170	949
Corresponding period in 1914 ...	1	1	76	957	...	...	58	380	150	744

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Aug 20, 1917
NOTE —The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

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Pres. Dr. O. Charnock Bradley,
Ryl. (Dick) Vet. Coll: Edinburgh
Hon. Sec. Prof. A. Gofton, Muncipal Buildings, Edin.
(on Service).

NORTH OF SCOTLAND V.M.S.
Pres: Mr. W. Hepburn, F.R.C.V.S., Aberdeen.
Hon. Sec. & Treas: Mr. G. Howie, M.R.C.V.S. Alford, Aberdeen
Meetings, Last Saturday in January and August

ROYAL SCOTTISH V.S.
Pres: Mr. Reid, M.R.C.V.S., Auchtermuchty.

SCOTTISH METROPOLITAN V.M.S.
Pres: Mr. J. Riddoch, M.R.C.V.S., Edinburgh
Hon. Sec. & Treas: Mr. Jas. Henderson, M.R.C.V.S.,
Public Health Dept., City Chambers, Edinburgh

WEST OF SCOTLAND V.M.A.
Pres: Prof. John R. McCall, M.R.C.V.S., Vety. Coll. Glasgow
(on Service).
Hon. Sec: Mr. J. F. Macintyre, M.R.C.V.S.,
19 Bank Street, Hillhead, Glasgow
Hon. Treas: Mr. Geo. W. Weir, M.R.C.V.S.,
88 Crookston Street, Glasgow
Meetings, Second Wednesday, May, Oct. and January